

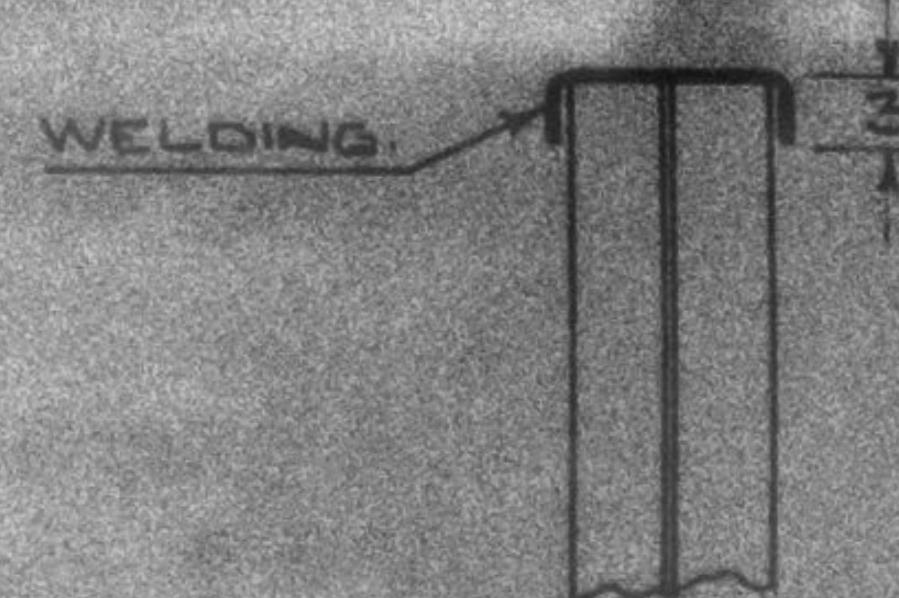
# V. EMPIRE METAL. SHIP SECTION

SIZES: 460'-0" B.R. x 59'-0" MLD x 34'-0" DEPTH MLD.

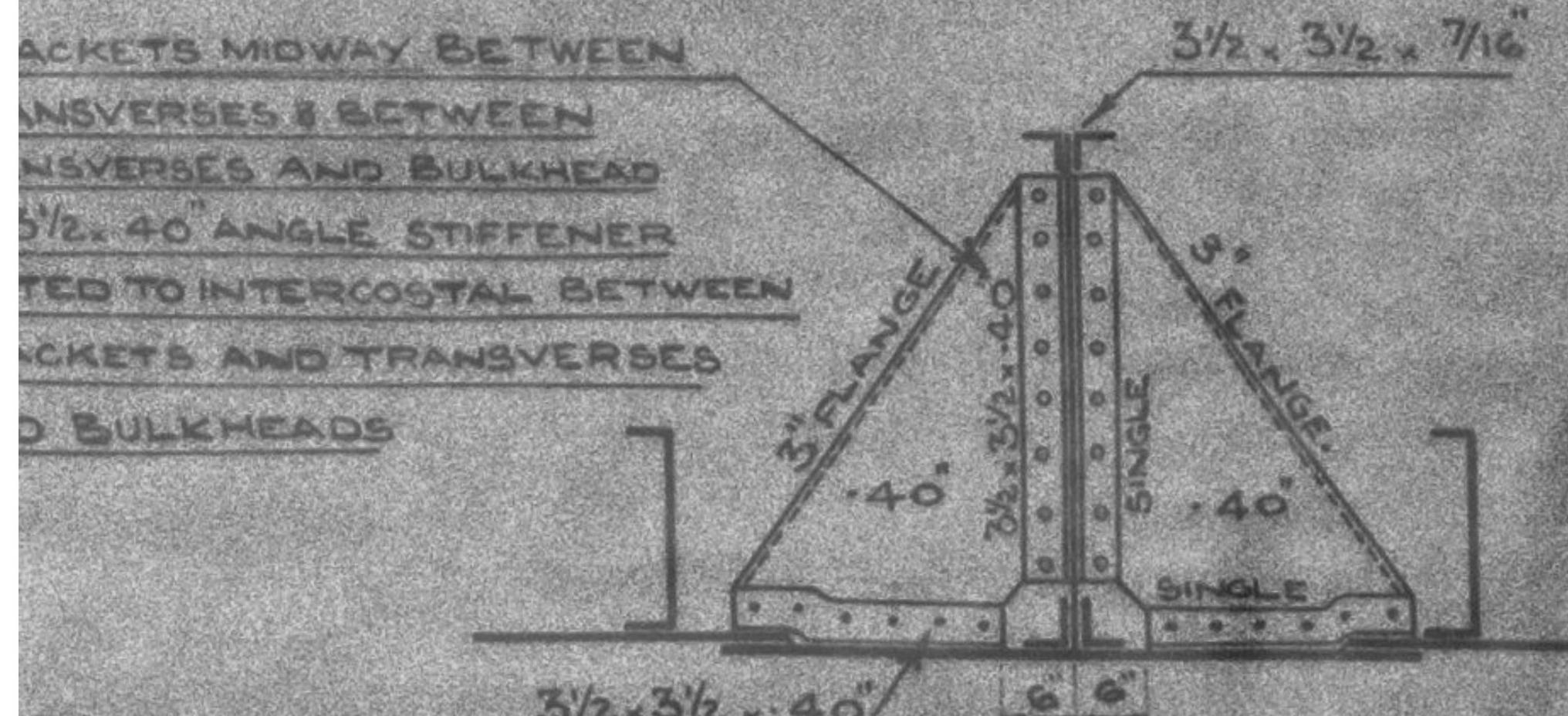
$\frac{1}{2}'' = 1\text{-}0''$

ATTACHMENT ANGLES TO BULKHEADS HYDRAULICALLY  
ON THE GROUND PRIOR TO ERECTION  
SEAMS OR BUTTS ARRANGED IN WAY OF THE  
TIONS OF THE TRANSVERSE & STRINGERS TO BULKHEADS

SECTIONS MARKED  $\checkmark$  RIVET HOLES IN BOTH BAR & BULKHEAD  
 $\frac{1}{16}$ " SMALL AND CAREFULLY REAMERED OUT AFTER ASSEMBLY  
TIONS THEN DISMANTLED AND SURFACES CLEANED AND ALL  
REMOVED ON RE-ASSEMBLY BOLT FITTED IN EVERY 3<sup>RD</sup> HOLE ALSO  
HOLES AT BOTH ENDS OF BARS AND ALL THOROUGHLY HARDENED UP  
BARS ON FACE SIDE OF BULKHEAD WELDED PRIOR TO RIVETING (SEE SKETCH)



DETAIL OF CENTRE GIRDER TRIPPING BKT



LONGITUDINAL FRAMING AT BOTTOM & AT DECK.

ALL BULB ANGLES ARE TO NEW BRITISH STANDARD.

SCANTLINGS SHewn APPLY AMIDSHIPS AND ARE TO BE

INCREASED FOR SHEER AS REQUIRED.

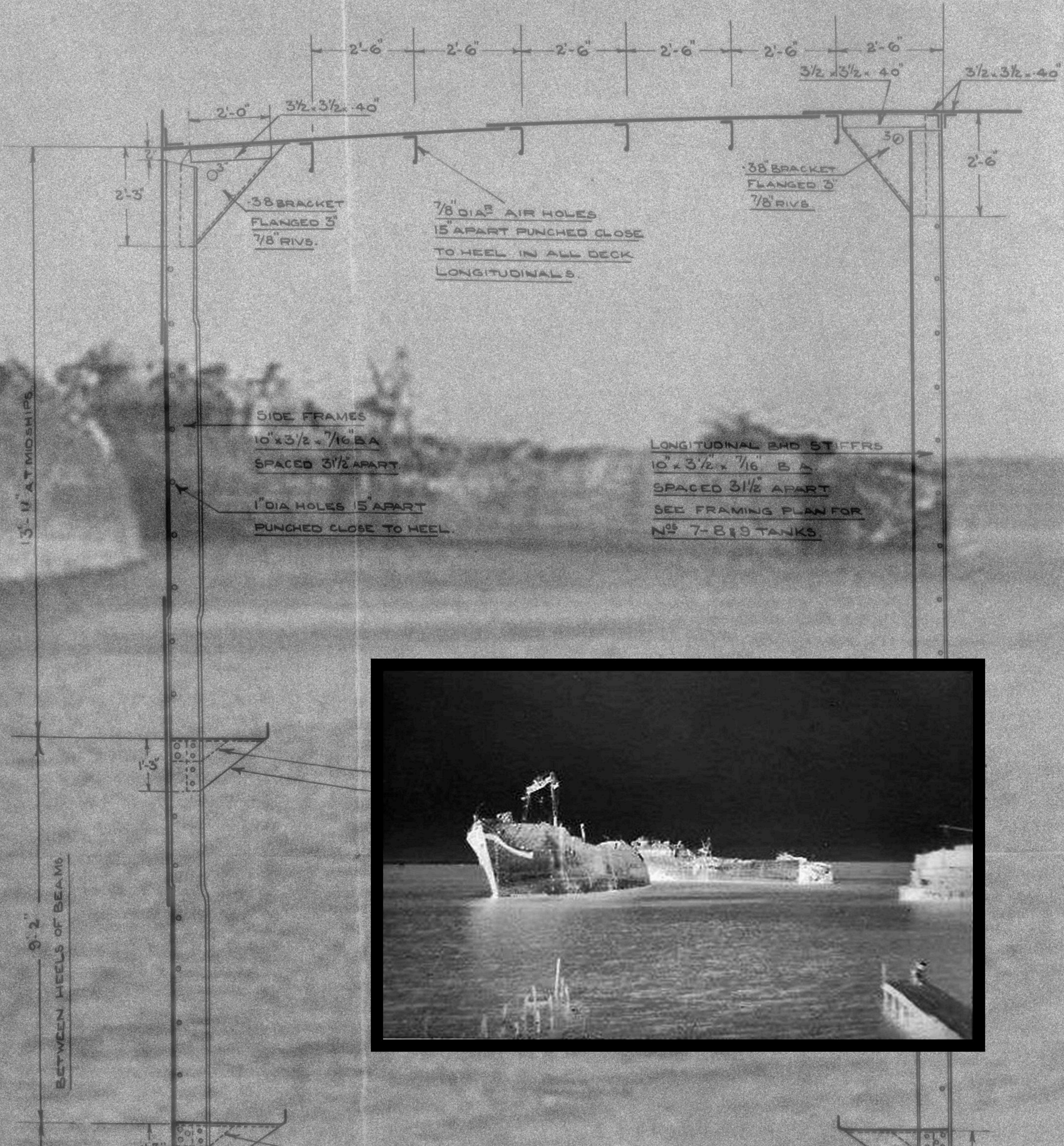
SCANTLINGS CLEAR OF CARGO

OIL TANKS SPECIALLY CONSIDERED.

L x D 460'-0" x 34'-0"

L x (B+D) 460'-0" x (59'-0" + 34'-0")

L/D 460/84.



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HARLAND & WOLFF'S

N° 11609

"PLAN OF STEEL DECKS"

11609 Empire Metal  
GLASGOW REPORT No. 66140

RETAIR



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PLAN N° 3.

N° 11605.

PLAN OF STEEL DECKS.

DIMENSIONS 460'-0" x 59'-0" x 34'-0" M<sup>LR</sup>.

TO LLOYD'S CLASS 100 A.I. CARRYING.

PETROLEUM IN BULK.

SCALE 1/6" = 1 FOOT.



19 APR 1941

Railroad and Shipyard, Limited  
From Bishopgate Works, London

19 APR 1941

HARLAND & WOLFF LTD

FINISHED MIDSIDE SECTION

N° 11609. (EMPIRE METAL)

GLASGOW REPORT No. 66140

Similar to Empire Oxide

Ges. Report No 64860

H x W 1083 S

RETAIN



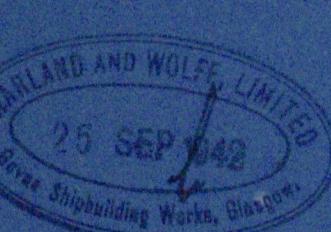
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# M.V. EMPIRE METAL. MIDSHIP SECTION

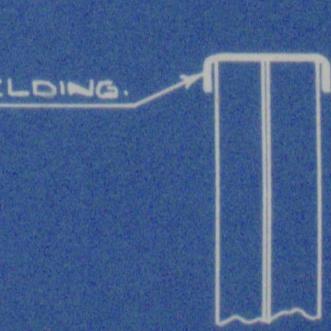
DIMENSIONS: 460'-0" B.P. x 59'-0" MLD x 34'-0" DEPTH MLD.

SCALE 1/2" = 1'-0".



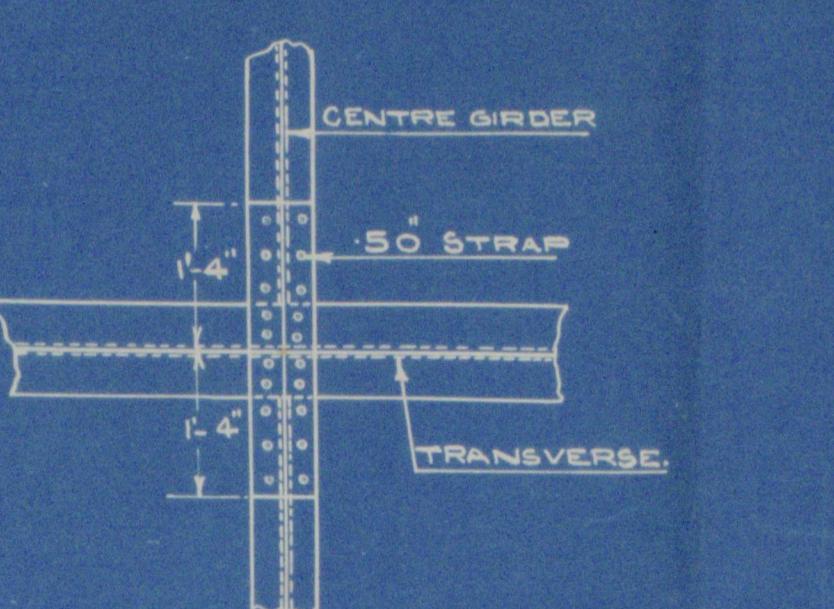
ALL ATTACHMENT ANGLES TO BULKHEADS HYDRAULICALLY  
RIVETED ON THE GROUND PRIOR TO ERECTION  
NO PLATE SEAMS OR BUTTS ARRANGED IN WAY OF THE  
CONNECTIONS OF THE TRANSVERSE & STRINGERS TO BULKHEADS.

IN CONNECTIONS MARKED THUS ✓ RIVET HOLES IN BOTH BAR & BULKHEAD  
PUNCHED  $\frac{1}{16}$ " SMALL AND CAREFULLY REAMED OUT AFTER ASSEMBLY  
CONNECTIONS THEN DISMANTLED AND SURFACES CLEANED AND ALL  
BURRS REMOVED. ON RE-ASSEMBLY BOLT FITTED IN EVERY  $\frac{3}{16}$ " HOLE ALSO  
IN BOTH HOLES AT BOTH ENDS OF BARS AND ALL THOROUGHLY HARDENED UP  
END OF BARS ON FACE SIDE OF BULKHEAD WELDED PRIOR TO RIVETING (SEE SKETCH)



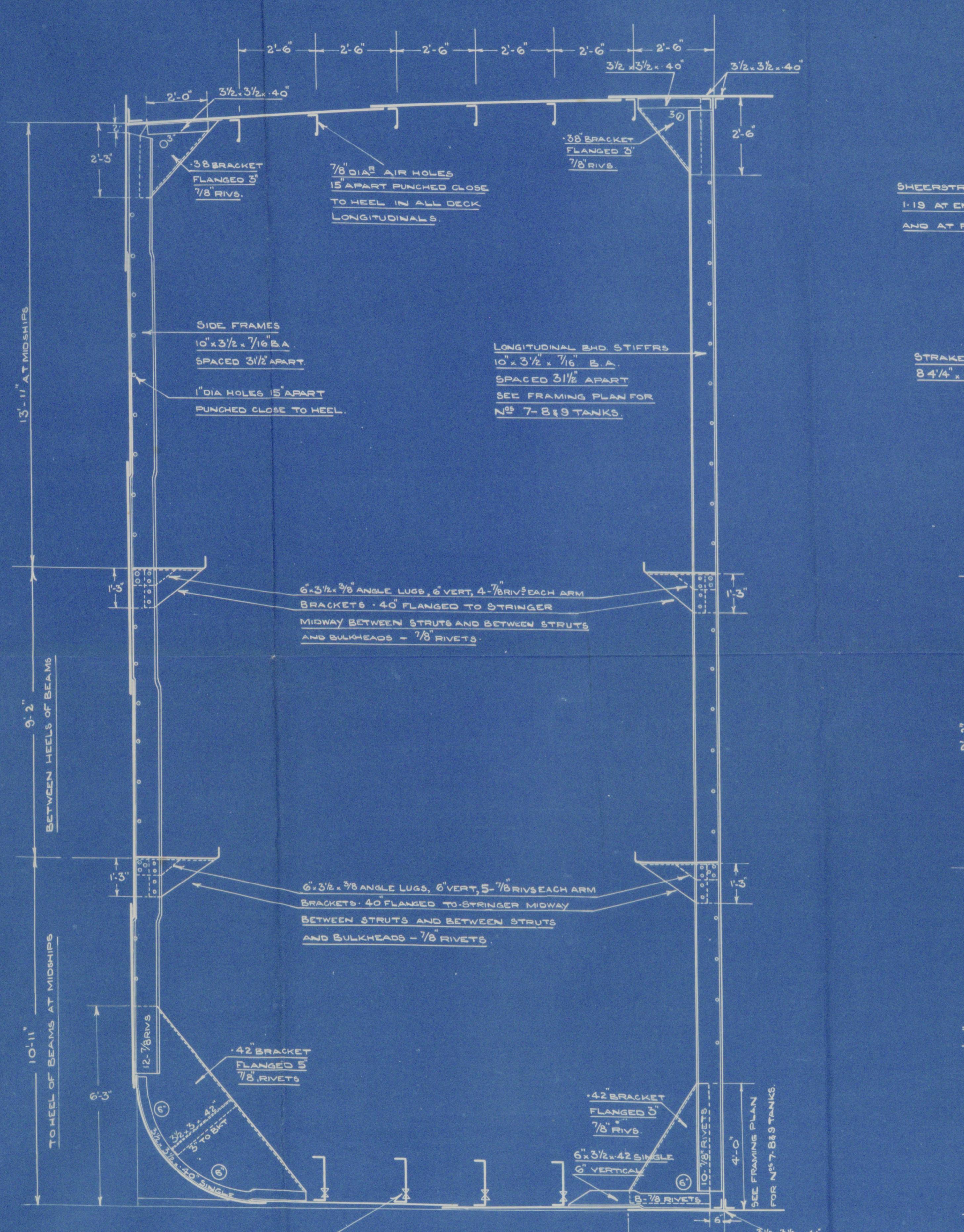
DETAIL OF CENTRE GIRDER TRIPPING END

TRANSVERSE 8" BETWEEN  
INTERCOSTAL STIFFENERS  
 $5\frac{1}{2}$ " ANGLE STIFFENERS  
FITTED TO INTERCOSTAL BETWEEN  
BRACKETS AND TRANSVERSE  
AND BULKHEADS



TO CLASS LLOYDS 100 A.I.  
CARRYING PETROLEUM IN BULK"  
LONGITUDINAL FRAMING AT BOTTOM & AT DECK.  
ALL BULB ANGLES ARE TO NEW BRITISH STANDARD.  
SCANTLINGS SHOWN APPLY AMIDSHIPS AND ARE TO BE  
INCREASED FOR SHEER AS REQUIRED.  
(SCANTLINGS CLEAR OF CARGO  
OIL TANKS SPECIALLY CONSIDERED.)

LLOYDS NUMERALS  
L x D 460'-0" x 34'-0" = 15640.  
L x (B+D) 460'-0" (59'-0" + 34'-0") = 42780.  
B/D 460/34. = 13.52.



② Harlan & Wolff  
1160 C.

Details of Shaftron

R. H. M.  
1160 Empire Metal  
GLASGOW REPORT No. 66140

Surveyors Copy

W1194-0054



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60579

NO OFF	DESCRIPTION	PATTERN NUMBER	MATERIAL	EST WEIGHT OF EACH IN LBS	REMARKS	SECTION & SUB CODE NO	SHOP	SK. NO OF JIG
1	PROPELLER SHAFT	P 7584	M.S.3		SHAFTING	4/0534		
1	PROPELLER SHAFT NUT	P 5316	WROUGHT IRON		TO	"		
1	PROPELLER SHAFT LINER	P 7585	G.M.4		LLOYD'S	"		
1	PROPELLER SHAFT KEY	P 5318	M.S.3		REQUIREMENTS	"		
1	INTERMEDIATE SHAFT	P 5319	M.S.3			4/0533		
1	THRUST SHAFT	P 5320	M.S.3			4/0532		
1	LOCKING PLATE FOR PROPELLER NUT	P 2578	M.S.3			4/0534		
2	3/8 SET PINS FOR LOCKING PLATE	C 29	M.S.1			"		
1	7/8 SET PIN FOR KEY	P 1096	M.S.1		CS 2/45227	"		
1	7/8 SET PIN FOR KEY	P 1097	M.S.1		CS 2/45227	"		
20	80 3/4 INCH BOLT FOR COUPLINGS A & B	P 5321	3% NICKEL STEEL TENSILE STRENGTH (ABOUT 40 TONS)		C.S.I.	4/0533		
8	80 3/4 INCH BOLT FOR COUPLING C	78056			" { SAME AS FOR CRANKSHAFT }	"		
28	NUTS FOR COUPLING BOLTS	78057	WROUGHT IRON		" " "			
28	3/8 SPLIT PINS FOR COUPLING BOLTS	—	M.S.1					

**No 1160<sup>G</sup>.**      **No 1014**      **No 1008<sup>G</sup> & 1009**

**N° 10839**

*Sunbeam copy*  
INTERMEDIATE SHAFT NOS 105-  
DOLTS FOR EACH 1050-1

A circular blue stamp with a double-lined border. Inside the border, the words "H. H. & S. BUILDERS & ENGINEERS" are printed in a serif font, with "H. H." at the top and "BUILDERS & ENGINEERS" below it. Below the border, the word "SOUTHAMPTON" is printed. A large, dark, handwritten signature is written across the top half of the stamp, obscuring the "H. H." and "SOUTHAMPTON" text.

Suspension Cray

(W) Hartars-Wolff. Det. 1160 G  
A./MS. 265.

Crank Shaft.

1160<sup>G</sup>, Empire Metal  
GLASGOW REPORT NO. 66140

REPAIR



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